

CLAIMS

1. A lithographic apparatus comprising:
an illumination system constructed to provide a beam of radiation;
a support structure constructed to support a patterning device, said patterning device serving to impart a cross-section of said beam with a pattern to form a patterned beam;
a substrate table for holding a substrate; and
a projection system that projects said patterned beam onto a target portion of said substrate, wherein at least one of said support structure and said substrate table includes a chuck and a frame that supports said chuck with respect to other parts of said lithographic apparatus, and said chuck being thermally isolated from at least said frame.
2. A lithographic apparatus according to claim 1, further comprising:
a vacuum space positioned between said chuck and said frame.
3. A lithographic apparatus according to claim 1, wherein
said chuck and said frame are completely separated and spaced from each other by a gap.
4. A lithographic apparatus according to claim 1, wherein
at least one of said support structure and said substrate table is said substrate table and said chuck supports said substrate.
5. A lithographic apparatus according to claim 1, wherein
at least one of a part of a surface of said chuck directed towards said frame and a part of a surface of said frame directed towards said chuck has a low emissivity.
6. A lithographic apparatus according to claim 5, wherein
said at least one of a part of a surface of said chuck directed towards said frame and a part of a surface of said frame directed towards said chuck is covered with a low emissivity coating.
7. A lithographic apparatus according to claim 6, wherein
said coating contains chrome or silver.

8. A lithographic apparatus according to claim 5, wherein said low emissivity coating has an emissivity below 0.1.
9. A lithographic apparatus according to claim 1, wherein said chuck includes a heat buffer system.
10. A lithographic apparatus according to claim 9, wherein said heat buffer system is structured as a passive heat buffer system.
11. A lithographic apparatus according to claim 1, wherein one of said chuck and said frame are structured to reflect electromagnetic radiation in the infrared range.
12. A lithographic apparatus according to claims 1 further comprising:
a heat transfer device operable between said chuck and said object to transfer heat between said object to said chuck.
13. A lithographic apparatus according to claim 12, wherein said heat transfer device comprises a gas supply system to supply a backfill gas between said chuck and said object, said heat transfer device including a gas outlet positioned adjacent an object support surface of said chuck.
14. A method of manufacturing a device, comprising:
providing a substrate;
providing a beam of radiation using an illumination system;
using a patterning device to impart the beam of radiation with a pattern in its cross-section;
supporting one of the substrate and the patterning device with a chuck;
supporting the chuck with respect to other parts of the lithographic apparatus with a frame;
thermally isolating the chuck from the frame; and
projecting the patterned beam of radiation onto a target portion of the substrate.

15. A chuck for use in a lithographic device, comprising:
a first side having a support surface constructed to support an object;
a second side having a low emissivity coating to thermally isolate said chuck;
an enclosed chamber positioned within said chuck; and
a phase transiting material positioned within said enclosed chamber.
16. A lithographic apparatus comprising:
means for providing a beam of radiation;
means for forming a patterned beam;
means for supporting said means for forming a patterned beam;
a substrate;
means for holding said substrate; and
means for projecting the patterned beam onto a target portion of said substrate,
one of said means for forming said patterned beam and said means for holding a substrate
including means for thermally isolating one of said means for forming said patterned beam and
said substrate from other parts of said lithographic apparatus.